

## Chapter 14 – Crafts Repair and Modifications

### 14.1 Purpose

This chapter covers management practices that should be employed by journey-level skilled crafts personnel. The Crafts Crew repairs, modifies or constructs facilities, features and structures at King County parks and pools. Buildings and their components must always be maintained at a level that meets all building codes and safety regulations. Work is performed by trained, licensed and certified Crafts Crew ensures a professional, code-compliant product that is safe, attractive, functional and environmentally friendly. Professional repair and modification also prolongs our facilities and protects assets, the public, staff and the environment.

### 14.2 Definitions

**Hard features:** hard surfaces such as pavement, trails and pathways, boardwalks, foot bridges, maintenance vehicle bridges, trestles, borders, park furniture, drainage facilities, parking lots, fencing, bollards, gates, drinking fountains, signs, benches, garbage receptacles, parking, field and trail lights.

**Buildings and structures:** refers to the many, diverse types of buildings and structures in our park system. These include community centers, arts and crafts centers, aquatics facilities, conference centers, fairgrounds, arenas, grandstands, docks, boat ramps, bridges, picnic shelters, play structures, lodges, campgrounds, cabins, gazebos, kiosks, office buildings, restroom buildings, concession stands, scoring booths, maintenance shops, and storage buildings.

**Components of buildings and structures:** refers to structural members, roofs, siding, gutters, locks, doors, hardware, windows, light fixtures, light poles, electrical outlets, electrical panels, hand dryers, pumps, motors, fans, water fountains, sinks, urinals, toilets, toilet stalls, spigots, walls, floors, ceilings, floor coverings, play equipment, decking, stairs, railings, ramps, etc.

**Maintenance and minor repair:** daily maintenance, minor repair or temporary securing of our facilities. Resource staff does this work. It includes such activities as replacing standard light bulbs, cleaning surfaces, tightening an existing fastener, cleaning drain screens, and cleaning gutters. (See also Chapters 11, Parks Ground Features; 12, Recreation Facilities & Athletic Fields; and 13, Buildings & Structures Cleaning and Minor Repairs).

**Skilled Crafts repair and modification:** refers to repairs and modifications completed by members of the Crafts Crew. The Crafts Crew includes journey-level carpenters, painters, plumbers and electricians and utility workers trained to assist the Crafts Crew and licensed Playground Specialists. This work is defined as any repair or modification that might: (1) require replacement or alteration of a component of a building or structure; (2) involve or affect any structural, electrical or mechanical components or systems within a building or structure (elimination of an intake vent, enhancement of a lighting capacity, removal or alteration to a floor joist, application of a chemical to a wall surface); and/or (3) require licensing or certification under the law (e.g., all plumbing, electrical and playground work.)

### 14.3 Background

Parks are home to a diverse array of structures. Buildings vary from major facilities like the Aquatics Center in Federal Way, to community centers at White Center, outdoor swimming pools at Vashon Island and Cottage Lake, recreation offices at Marymoor, and maintenance shops at

Sunset and Renton Shop. Structures range from boardwalks and docks, to grandstands, picnic shelters, bridges and gazebos.

## 14.4 Planning

King County Park System buildings and structures are planned through a public process with input from staff and the community. It is important that Resource and the Crafts Crew lend their expertise to design development. Buildings should be reviewed on a 10-year cycle to determine sound condition, use requirements and code compliance. Building components should be inspected regularly through a preventative maintenance plan coordinated by the Crafts Crew.

The following are planning considerations important to the Crafts Crew:

- Install electrical and plumbing fixtures, outdoor furniture and door hardware to meet Parks' standards for type, size and style.
- Do not introduce new items without consultation with Crafts Crew.
- Have Crafts Crew review all proposed plans for park renovations and new construction.
- Record all specifications on newly installed products with Crafts Crew. Include information on paint products and colors, electrical and plumbing fixtures, door hardware, etc.

## 14.5 Design

Like planning, design of a facility is important to how well a building can be maintained. Buildings should be practical, functional, attractive, safe, code-compliant, environmentally friendly and vandal-resistant. Features should provide the utility desired and be within the theme or character of the park. Ease of maintenance and durability both affect long-term maintenance costs and ultimate condition of a park.

Whenever possible, features and fixtures should be standardized to reduce replacement costs, parts inventory and ensure high quality. Design all features to be most vandal-resistant. Use unbreakable plexi-glass covers and lens. Select stainless steel over light gauge, corrosive metals. And avoid features with handles or other protrusions that can easily break off. Design principles should include the following:

1. Maintenance efficiencies.
2. Staff capabilities.
3. Parks' standardized products.
4. Quality and proven performance of products.
5. Maximum vandal-resistance.
6. Current use *and* projected future use of facilities. Design should not be based on minimum needs. Consider *year-round* use even if a facility not currently all year.

Funding is generally more available for new construction or re-development than for maintenance work. Therefore, utilizing the design principles listed above will help to minimize ongoing Crafts repair and maintenance costs while ensuring high quality products and functional facilities.

Specific design recommendations are listed below:

- Ensure all exterior wood is pressure-treated. Make all fasteners stainless steel.
- Do not plant deep and thick-rooted vegetation within 10 feet of a sewer or water line.
- Do not plant bushes or other large shrubbery close to building walls.
- Use ground cover material of greater than 5/8-inch diameter to thwart vandals plugging drains.
- Make all valve boxes visible, easily accessible and vandal-resistant.
- Use twist-type covers for round valve boxes in vegetated areas.
- All exterior electrical fixtures and receptacles on shelters, athletic courts and fields should be vandal-resistant. Recess electrical outlet boxes.
- Design all features with optimal vandal resistance in mind. Use unbreakable plexi-glass, stainless steel and heavy gauge metals. Maximize lighting outside facilities.
- Locate electrical manhole covers away from maintenance vehicle traffic. Use appropriate cover to withstand weight.
- Install 20 amp (minimum) receptacles for pop machine use at all major activity areas such as backstops, restrooms, and community centers.
- Where possible, locate electrical panel in independent room with no storage allowed.
- Allow for future electrical installations by designing for extra electrical capacity beyond current need.
- Use stainless steel fasteners and fixtures.
- Use solid or recycled plastic products whenever possible. Plastic does not rust or rot, is highly durable, and tends to be more vandal-resistant. Use solid plastic toilet stalls, plastic lumber decking.
- Design plumbing system to allow for a winterization with high-pressure air.

## 14.6 Maintenance Practices

The following are the major categories and example of ongoing and preventive maintenance performed by the Crafts Crew:

Maintenance Activity	Work Request Example
<b>Survey and inspection</b>	Inspect backflow device
<b>Troubleshooting system problems</b>	Test and adjust pump system
<b>Repair</b>	Close gap on S-hook of swing chain
<b>Replacement</b> (beyond repair)	Install new deadbolt in existing hole
<b>Preventative maintenance</b>	Annually replace diaphragms and washers
<b>Upgrading</b> (for code-compliance)	Install lever-device door lockset
<b>Restoration</b> (for historical preservation)	Remove paint and apply clear finish
<b>Remodeling</b> (for change in use)	Convert storage area into an office space
Major renovation (new construction)	Install new electrical service
Assistance with CIP projects	Review proposed plans, participate in site meetings and inspections, or assist in locating features

## 14.7 Carpentry Work

### Ongoing Routine Maintenance

- Perform all work according to Uniform Building Codes (UBC) and Americans with Disabilities Act (ADA) codes.
- Standardize all door hardware.
- Ensure Parks' standards for color and style of carpentry products complement existing room or building design. Consult with site staff.
- Ensure modifications of historical landmark buildings have been through review and are authorized by King County Historical Preservation Office.
- Maintain inventory of all locks, cores and key information for all facilities using a key control system.



Use environmentally friendly and non-hazardous materials and products. Preventative Maintenance and Repairs

- Use solid or recycled plastic products whenever possible. Use solid plastic toilet stalls, and plastic lumber decking.
- Design all features with optimal vandal-resistance in mind.
- Use stainless steel fasteners and products.
- Complete regular preventative maintenance checks on all locks and door hardware. This work includes regular lubrication and replacement of cores, springs and other high-wear parts.

## 14.8 Electrical Work

### Ongoing Routine Maintenance

- Perform all electrical work per national, state and local electrical codes, and ADA.

Install vandal-resistance covers to highly exposed light fixtures and electrical outlets on picnic shelters, restrooms and exteriors of buildings.

- Verify proper labeling on all electrical and control panels. Include outlets where necessary.
- Clean electrical panels regularly.
- Do not complete any modifications of historical landmark buildings without the review and authorization of the King County Historical Preservation Office.

### Preventative Maintenance and Repairs

- Use standardized materials and products for all new installations.
- Complete biannual preventative maintenance checks on all pump systems. Include (1) Check for



- proper motor functioning; and (2) Test all control systems (i.e., floats, fuses, contactors, relays).
- Complete biannual preventative maintenance checks on all motors (above 1 HP). Include (1) Check for proper current draw, proper internal resistance, and proper RPM; (2) Check bearings and lubrication; (3) Check belts for wear and proper tension; and (4) Check contactors.

Check contacts annually in contactors for all lighting systems.

## 14.9 Painting Work

### Ongoing Routine Maintenance

- Use “environmentally and people friendly” products whenever possible—e.g., water-based, low-fume paints and finishes.
- Properly dispose of used solvents and other paint at the Renton shop hazardous waste disposal site. Never dispose of paint products in sink drains, storm drains or on the ground.
- Be sure to have used rags cleaned at a commercial laundry.
- Always protect the public and staff from harmful, unsafe or toxic painting products.
- Do not complete any modifications of historical landmark buildings without the review and authorization of the King County Historical Preservation Office.

### Preventative Maintenance and Repairs

- Always seal surfaces after pressure-washing or graffiti removal.
- Re-stripe all parking lot lines and emblems every 2 years.
- Apply finish to all wood floors annually. When applying finishes, close the facility to all public and staff for a minimum of 2 weeks. Be sure all pilot lights and other flames are extinguished before application.
- Paint all exteriors of buildings at least once every 10 years. Survey condition regularly.

## 14.10 Playground Specialist Work

### Ongoing Routine/Maintenance

- Ensure all repairs and installations comply with the current ADA, ASTM (American Society of Testing and Materials) and CPSC (Consumer Product Safety Community) standards and guidelines.
- Make all repairs and replacements in a timely manner, so that playground equipment is not left in a hazardous or unsafe condition. Remove equipment or close down site if hazardous.
- Maintain, monitor and respond to work identified on the monthly inspection reports completed by the resource field staff.
- Respond to public concerns and questions regarding playground safety issues, design or community needs.
- Maintain records on all repairs and replacements.
- Monitor replacement schedule for all play areas. Provide information to Parks' and project managers on safety, age of sites and community needs.



### Preventative Maintenance and Repairs

- Perform annual audits and inspections of all play sites to check compliance with standards. Repair and modify as necessary.
- Train resource field staff in identifying and responding to playground hazards. Train staff in how to complete monthly inspection reports.
- Monitor warranty coverage of new installations for all repairs.



- Replace “S” hooks, clevis hooks and swing chains annually.
- Pressure-wash play equipment annually. Initiate work request to Utility Workers.

## 14.11 Plumbing Work

### Ongoing Routine Maintenance

- Perform all work to Uniform Plumbing Codes (UPC) and ADA codes.
- Maintain valve controls and control boxes to ensure accessibility and proper functioning. Clean out mud and debris regularly.
- During normal repair work on a specific fixture, inspect all other plumbing fixtures at the site to ensure proper functioning.
- Conduct all annual back-flow device inspections, as required by local water districts. Make repairs as necessary. Maintain records on all back-flow device inspections and repairs.
- Do not complete any modifications of historical landmark buildings without the review and authorization of the King County Historical Preservation Office.

### Preventative Maintenance and Repairs

- Replace all washers, diaphragms, vacuum breakers and discs annually.
- Winterize all unheated buildings and exterior fixtures/piping before November 1.
- Monitor the regular pumping of septic tank every 5 years.
- Respond to repair needs for pump systems as identified by the Electricians’ Shop during their biannual preventative maintenance inspections.

## 14.12 Crafts Utility Work

### Ongoing Routine Maintenance

- Assist carpenters, electricians, painters and lumbers with construction site set-up, cleanup, demolition, and materials procurement and handling. Use proper safety equipment and protective clothing at all times.
- Construct and repair ball field drags, floats and baseball pegs.
- Remove major graffiti with pressure-washer.

### Preventative Maintenance and Repairs

- Pressure-wash playground structures.



## 14.13 Training

Staff should receive training in the following areas:

- Electrician's re-certification and licensing, and required technical upgrading classes.
- Plumber's re-certification and licensing, and required technical upgrading classes.
- ADA compliance training for carpenters, electricians, playground specialists and plumbers.
- Technical upgrading for journey-level craftspeople.
- Confined space equipment and procedures.
- Respirator fitting and procedures.
- Asbestos and hazardous materials.
- Ladder, scaffolding and height safety.
- Forklift and other lift certification.
- Locksmithing.
- Pressure-washer operation and maintenance.
- Hazardous waste disposal.
- Communications skills and styles.
- Team-building skills.
- Diversity training.
- Computer training: Microsoft Word, Excel, and Outlook.